

## **EXHIBIT E**

**USP 5,572,195 (Heller et al.)**

<b>Clm 1.</b> An object location and tracking system for tracking <b>infrared transmitters that transmit identifying codes, comprising:</b>	<p>“Infrared transmitters that transmit identifying codes” are transmitters that transmit identifying codes using infrared.</p> <p>“Comprising” means including.</p>
a computer network for passing messages;	The words in this limitation have their ordinary meanings.
a computer connected to said network, said computer including means for sending and receiving messages over said computer network in a <b>variable-based protocol that implements object identifier variables;</b>	<p>A “variable based protocol” is a protocol employing a fetch-store paradigm in which each server on a network assigns and maintains a set of conceptual variables.</p> <p>An “object identifier” is a software data construct used in a computer network in which objects (such as transmitters to be located in an object location system and sensors receiving signals from those transmitters) are assigned identifiers by the network.</p> <p>“Object identifier variables” are variables used in a variable based protocol to correspond to objects to be tracked or located.</p> <p>This is a “means plus function” limitation.</p> <p>The claimed function is “sending and receiving messages over a computer network.”</p> <p>The disclosed structure is a computer network including infrared transmitters, infrared sensors, external device controllers, concentrators, and control processors or personal computers as set forth in Figs 1 – 5.</p> <p>.</p>
a plurality of <b>infrared sensors</b> for receiving transmitted <b>identifying codes</b> from the <b>infrared transmitters</b> , said plurality of infrared sensors	<p>“Infrared sensors” are sensors that receive infrared transmissions.</p> <p>“Identifying codes” are codes identifying a transmitter.</p>

<p>providing signals containing the <b>transmitted identifying codes</b>; and</p>	<p>“Infrared transmitters” are transmitters of infrared signals. “Transmitted identifying codes” are identifying codes transmitted by means of infrared signals.</p>
<p>interface circuitry coupling said plurality of <b>infrared sensors</b> to said computer network, said interface circuitry including means for providing to said computer network <b>object identifier variables</b> in the <b>variable-based protocol</b> corresponding to the <b>transmitted identifying codes</b> received from said signals from said plurality of infrared sensors.</p>	<p>See above definitions of highlighted terms.  This is a means plus function limitation.  The claimed function is “providing to a computer network object identifier variables in a variable-based protocol corresponding to identifying codes transmitted using infrared and received by infrared sensors.”  The disclosed structure is set forth in Figs 1-5 and includes transmitters that employ infrared radiation to transmit codes identifying the transmitters and infrared sensors that receive such transmissions.</p>
<p><b>Clm. 13.</b> A method for tracking and locating objects in a system with a computer network, a computer connected to the computer network, <b>infrared sensors</b>, and interface circuitry connecting the computer network to the infrared sensors, the infrared sensors being adapted to receive <b>unique identifying codes</b> from <b>infrared transmitters</b>, comprising the steps of:</p>	<p>See above for definitions of highlighted terms.  A “unique identifying code” is an identifying code that identifies one and only one object in a system of multiple objects.  “Unique identifying codes from infrared transmitters” are unique identifying codes transmitted using infrared by infrared transmitters.</p>
<p>providing <b>object identifier variables</b> in the interface circuitry, said object identifier variables adapted for being communicated over the computer network in a <b>variable based protocol</b>;</p>	<p>See 1.</p>
<p>receiving in one of the infrared sensors a transmission from one of the infrared transmitters containing a <b>unique identifying code</b>;</p>	<p>See 1.</p>
<p>sending the received <b>unique identifying code</b> from the infrared sensor to the interface circuitry;</p>	<p>See above.</p>

providing the <b>unique identifying code</b> in the interface circuitry to the computer network in association with an <b>object identifier variable</b> ; and	See above and 1.
receiving in the computer the <b>unique identifying code</b> from the network by accessing its associated <b>object identifier variable</b> .	See above and 1.

**USP RE36,791 (Heller)**

<b>Clm 25.</b> A location system for locating objects within a tracking environment using <b>area-detection</b> by receivers that receive electromagnetic transmissions from <b>assigned areas</b> , comprising:	<p>“Area detection” means a radiolocation system using receivers configured to detect TAG transmissions only from respective non-overlapping areas, so that signals from an object will be received by only one receiver.</p> <p>“Assigned areas” are areas around receivers that are configured such that the signal from an object within that area is received by a single receiver.</p> <p>“Comprising” means including.</p>
for each object, a <b>TAG transmitter</b> for transmitting, at selected intervals, <b>TAG transmissions</b> that include a <b>unique TAG ID</b> ;	<p>A “TAG transmitter” is a transmitter attached to an object to be located.</p> <p>A “TAG transmission” is a transmission from a TAG transmitter.</p> <p>“Unique TAG ID” means an identification that is unique to a specific TAG transmitter, so that every TAG has a different identification.</p>
an array of receivers distributed within the tracking area, with each receiver being configured to receive TAG transmissions from an <b>assigned area of a predetermined size</b> ;	“Assigned area of predetermined size” means an area surrounding a receiver that is configured in advance so that the signal from an object within that area is received only by one receiver.
each receiver including a <b>data communications controller responsive to the receipt of a TAG transmission</b> for providing a <b>corresponding area-detection packet</b> that includes the received TAG ID; and	<p>“Data communications controller” means a programmed controller equivalent to a diskless networked processor that controls the transmission of data over a network.</p> <p>“Responsive to the receipt of a TAG transmission” means providing an output resulting from the receipt of a TAG transmission.</p> <p>A “corresponding area-detection packet” is a packet of information provided by the data communications controller that corresponds to the TAG transmission received from an assigned area and that includes the identification of the tag contained in the TAG transmission.</p>

<p><b>a location processor</b> for receiving the area-detection packets, and for determining the location of each TAG, and its associated object, <b>based on</b> the identity of the receiver receiving the TAG transmissions for that TAG.</p>	<p>A “location processor” is a processor that determines location.</p> <p>An “area detection packet” is a packet of information that corresponds to a TAG transmission from an assigned area and that includes the identification of the TAG contained in the TAG transmission.</p> <p>“Based on” means on the basis of.</p> <p>The “identity of the receiver” is the assigned area in which the receiver is located.</p>
<p><b>Clm 39.</b> The location system of claim 25, wherein the receivers are coupled to the <b>location processor</b> by a local area network, with each receiver including a <b>LAN</b> interface, such that the <b>area detection packets</b> are communicated to the location processor over the LAN.</p>	<p>See 25 for the construction of highlighted terms.</p> <p>“LAN” means local area network.</p>
<p><b>Clm 48.</b> A method of locating objects within a tracking environment using <b>area-detection</b> by receivers that receive electromagnetic transmissions from <b>assigned areas</b>, comprising:</p>	<p>See 25.</p>
<p>for each object, providing a <b>TAG transmitter</b> for, at selected intervals, <b>TAG transmissions</b> that include a <b>unique TAG ID</b>;</p>	<p>See 25.</p>
<p>providing an array of receivers distributed within the tracking area, with each receiver being configured to receive <b>TAG transmissions</b> from an <b>assigned area of a predetermined size</b>;</p>	<p>See 25.</p>
<p>each receiver being <b>responsive to the receipt of a TAG transmission</b> for providing a <b>corresponding area-detection packet</b> that includes the received TAG ID; and</p>	<p>See 25.</p>

<p>determining the location of each TAG, and its <b>associated object</b>, based on the identity of the receiver receiving the TAG transmissions for that TAG as represented by the <b>area-detection packet</b> provided by such receiver that received the TAG transmissions.</p>	<p>“Associated object” is the object to which the tag is attached. See 25.</p>
<p>a location processor for receiving the <b>area-detection packets</b>, and for determining the location of each TAG, and its associated object, based on the identity of the receiver receiving the TAG transmissions for that TAG.</p>	<p>See 25.</p>
<p><b>Clm. 66</b> A location system for locating objects within a tracking environment using area-detection by receivers that receive transmissions from assigned areas, comprising:</p>	<p>See 25.</p>
<p>for each object, a <b>TAG transmitter</b> for transmitting at selected intervals, <b>TAG transmissions</b> that include a <b>unique TAG ID</b>;</p>	<p>See 25.</p>
<p>an array of receivers distributed within the tracking area, with each receiver being configured to receive <b>TAG transmissions</b> from an <b>assigned area of a predetermined size</b>;</p>	<p>See 25.</p>
<p>each receiver including a data communications controller responsive to the receipt of a TAG transmission for providing a <b>corresponding area-detection packet</b> that includes the received TAG ID;</p>	<p></p>

a location processor for receiving the <b>area-detection packets</b> , and for determining the location of each TAG, and its associated object, based on the identity of the receiver receiving the TAG transmissions for that TAG; and	See 25.
a local area network, said array of receivers being coupled to the location processor by said local area network, with each receiver including a <b>LAN</b> interface, such that the <b>area detection packets</b> are communicated to the location processor over said LAN.	See 25 and 39.